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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of James Hugh McLaughlin) Group Art Unit
Serial No.: 09/964,143) 1617
Filed: September 25, 2001) Examiner
For: Emollient Skin Conditioning Cream and Method) Wang, Shengjun

November 12, 2005

Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, VA 22313

Filing of The Brief on Appeal Under 37 C.F.R. 41.37(c)

Dear Sir:

In reply to the Office Action mailed on October 14, 2005, Paper No. ?, please find three (3) of Appellant's Brief on Appeal in the above-identified patent application. The Brief of Appeal mailed on November 20, 2005, has been amended to hopefully comply with 37 C.F.R. 41.37(c) that was adopted on September 13, 2004, and unclear in the opinion of Appellant's attorney. More particularly, the original Brief of Appeal has been amended to add the following sections: (v) Summary of claimed subject matter; (vi) Grounds of rejection to be reviewed on appeal; (viii) Claims appendix; (ix) Evidence appendix; and (x) Related proceedings appendix.

The filing of foregoing Brief on Appeal is timely because the Office Action that required the amended brief was purportedly mailed October 14, 2005, and set the period for reply to one month from said date, i.e., November 14, 2005. For the record, Appellant's attorney reported that said Office Action undated and the copy of first page said Office Action is attached hereto. For record Appellant's attorney notified Mr. Craig Feinberg of that fact on October 24, 2005, by telefax and a copy of said telefax is attached.

The foregoing telefax to Mr. Feinberg pointed out an error on the communication mailed on August 16, 2005, and Mr. Feinberg said the error would be corrected, but as of this date nothing has been done. Further, my letter dated November 20, 2004, (copy attached) accompanying Appellant's original Brief of Appeal requested a statement of correct amount of fees payable in connection with appeal herein and the request remains unanswered. The performance of United States Patent herein leaves a lot to be desired in the humble opinion of Appellant's attorney. Accordingly, Appellant's attorney requests a copy of this letter be forwarded to compliance office or quality control office for reply and with copy of forwarding communication to said office sent Appellant's attorney.

In closing, I apologize in advance for extra work my foregoing request causes, but in my humble opinion the performance of Patent Office in connection with the subject application is substandard and not in accord with the applicable law and should be corrected.

Respectfully submitted,

Richard N. Miller

Richard N. Miller
Reg. No. 22,977

Enc. Appeal Brief (3 copies)

Undated Communication from Patent Office

Telefax dated October 24, 2005

Letter dated November 20, 2004

I hereby certify that this paper and enclosed Brief on Appeal is are deposited with the United States Post Office with sufficient postage as certified mail in an envelope addressed to the Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on 12th day of November, 2005, by Richard N. Miller

Richard N. Miller

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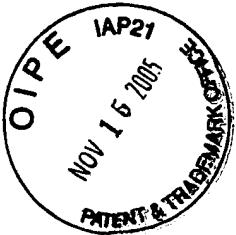
DATE MAILED:

10-14-05

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

Shengjun Wang
Primary Examiner
Art Unit: 1617



RICHARD N. MILLER
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BY TELEFAX ONLY ON OCTOBER 24, 2005

TO: CRAIG R. FEINBERG
PROGRAM AND RESOURCE ADMINISTRATOR FAX 1-571-273-0052

FROM: RICHARD N. MILLER
REG. NO. 22,977 FAX 1-973-338-0189

RE: APPEAL OF FINAL REJECTION IN APPLICATION NO. 09/964,143.

I am telefaxing you because I cannot contact you by telephone. You were absent today and you were on vacation the prior time I called. I guess my timing is bad. I am contacting you to complain about the following matters in subject appeal:

1. I received a communication from my client of a communication from Patent Office (Shengjun Wang, Primary Examiner) in above identified appeal with no mailing date. The first two pages of said communication are attached for your review. Because my client's response to this paper is due within 30 days from mailing date, I request that this paper be reissued with mailing date clearly set forth.
2. In my prior telephone call when you on vacation, I spoke to another person whose name I cannot remember with reference to the appeal and pointed out an error on Page 4 of paper mailed August 16, 2005, that was signed by you. More particularly, in second paragraph from the bottom of page 4, the stated date of November 22, 2004, for filing of appellant's Reply Brief is in error. Said Reply Brief was filed April 28, 2005. The gentleman I spoke to promised to correct that error and that wasn't done either.

In closing, I request that you respond to my above requests and telefax your response to my office. (I am "a one man gang" and am absent from my office a lot of the time.) If the communication from the Examiner cannot be reissued, please advise me of mailing date.

Very truly yours,

Richard N. Miller

Richard N. Miller
Reg. No. 22,977

Att. First two pages of undated response from Shengjun Wang

... Ms Cook - FAX was received



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re the Application of James Hugh McLaughlin) Group Art Unit
Serial No.: 09/964,143) 1617
Filed: September 25, 2001) Examiner
For: Emollient Skin Conditioning Cream and Method) Wang, Shengun

November 20, 2004

Commissioner of Patents and Trademarks
P. O. Box 1450
Alexandria, VA 22313-1450

Filing of The Brief on Appeal Under 37 CFR 1.192

Dear Sir:

Please find enclosed three (3) copies of Appellant's Brief on Appeal in the above-identified patent application together with the check in the amount o \$340.00 in payment of the fee for filing said Brief.

The filing of the brief is timely because the Notice of Appeal was filed on September 21, 2004, and time to respond to the Final Rejection herein was extended to November 23, 2004.

N.B. Appellant renews the request for a statement by U.S. Patent and Trademark Office of correct amount of fees payable in connection with Appellant's filing this appeal. The original request was made in Notice of Appeal herein and a copy is enclosed for your ready reference. The reply of some responsible person is requested again.

Respectfully submitted,

Richard N. Miller

Richard N. Miller
Reg. No. 22,977

Enc. Notice of Appeal

I hereby certify that this paper along with enclosed check and three copies of the enclosed Brief on Appeal are being deposited with the United States Post Office with sufficient postage as first class mail in an envelope addressed to the Commissioner Of Patent, P.O. Box 1450, Alexandria, VA. 22313-1450, on the 22 day of November, 2004, by Richard N. Miller.

Richard N. Miller



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of

)

JAMES HUGH McLAUGHLIN

) Group Art Unit 1617

Serial No. 09/964,143

)

Filed: September 25, 2001

) Examiner: Wang, Shengjun

For: EMOLLIENT SKIN CONDITIONING
CREAM AND METHOD

)

November 11, 2005

Hon. Commissioner of Patents and Trademarks

Washington, D.C. 20231

APPEAL BRIEF UNDER 37 CFR 4192

41.37(c)

RHM
11/12/05

(i) Real party in interest.

The real party in interest in this appeal is Crabtree & Evelyn, Ltd., the assignee of the invention claimed in the above-identified patent application.

(ii) Related appeals and interferences.

No other appeals or interferences are known to Appellant or the Appellant's legal representative or the Appellant's assignee which will directly affect or be directly affected by or have a bearing on the Board of Appeal's decision in this appeal.

(iii) Status of claims.

The status of all the claims, pending or cancelled or withdrawn, follows with the claims that are the subject of this appeal being identified:

Claims 1 and 2: (Cancelled)

Claim 3: (Pending and appealed)

Claims 4 and 5: (Cancelled)

Claims 6 and 7: (Pending and appealed).

Claims 8 – 32: (Cancelled)

Claim 33: (Pending and appealed)

Claims 34 – 36:(Cancelled)

Claim 37: (Withdrawn)

Claim 38: (Cancelled)

Claims 39 - 43: (Pending and appealed)

In summary, Claims 3, 6, 7, 33 and 39 – 43 are pending and the subject of this appeal and Claim 37 is withdrawn as being drawn to a non-elected invention. Claim 40 is sole independent claim being appealed. Further, the full text of claims involved in this appeal is set forth in (viii) Claims appendix herein.

(iv) Status of amendments.

All amendments to the claims filed subsequent to the Final Rejection herein have been entered.

(v) Summary of the claimed subject matter.

The invention in this appeal relates to a cosmetic exfoliating composition for cleansing and conditioning the skin of the human body in the form of a cream or extrudable paste. The text of the nine claims is set forth in (viii) Claims appendix of the Brief on Appeal with the text of generic claim 40 set forth below for the convenience of Board of Appeal with the antecedent basis in specification set forth in brackets following the claimed item.

Claim 40. A cosmetic exfoliating composition for use in cleansing and conditioning the skin of the hands, face, heels/knees/elbows and/or the body of a human

being [page 4, lines 3-5] in the form of a extrudable paste or cream [page 4, line 12] that comprises: (A) 40% to 60% by weight of emollient material [page 8, line 7] consisting of a major proportion of emollient oil[page 4, lines 19-20] selected from the group consisting of animal oils, vegetable or plant derived oils, hydrocarbon oils, silicone oils and mixtures thereof [page 7, lines 7, 8 and 14] and a minor proportion of an emollient hydrophobic compound selected from the group consisting of C12 –C18 fatty acids, C12 – C18 fatty alcohols, C12 – C18 fatty esters, Shea butter, lanolin or a lanolin derivative, lecithin and mixtures thereof [page 4, lines 18 – 22, and page 6, line 32 to page 7, line 4]; (B) a water-soluble surface active agent selected from the group consisting of anionic, nonionic, amphoteric, zwitterionic and cationic surfactants in a proportion selected from the range of 0.4% to 8.0% by weight, said proportion being effective to deposit a skin softening amount of emollient material on the treated skin without a greasy after-feel when said composition is rinsed from skin with water and the skin is dried [page 4, line 28 to page 5, line 1]; (C) a calcium or magnesium salt of a C14 – C18 monocarboxylic acid [page 4, lines 17 - 18] wherein the weight ratio of emollient material to said monocarboxylic acid salt is in the range of 4:1 to 2.5:1, said proportion being adequate to produce a composition in the form of a stable, extrudable paste or cream [page 4, lines 22 – 24]; (D) 10% to 45% [page 12, line 27] by weight of a non-irritating, mildly abrasive, skin compatible, particulate material that is effective to cleanse and lubricate the skin without abrading the skin [page 11, lines 17 – 19], said particulate material including a mixture of 8% to 20% by weight of a starch material [page 12, line 30] selected from the group consisting of starches and enzyme or acid hydrolyzed starches [page 12, lines 10 – 11 and lines 22 – 25] with another particulate material selected from the group consisting of sodium chloride, pumice, talc and vegetable flour[page 5, line 31 – page 6, line 1, and page 11, line 31 to page 12, line 25]; and (E) 0% to 10% by weight of water [page 12, line 31 to page 13, line 8]; said composition being effective to cleanse, soften, smooth and moisturize the skin when the composition is applied to and massaged into the skin, thereafter rinsed from the skin with tepid water and the skin is dried [page 5, lines 7 – 9].

For completeness, basis for each of claims dependent on foregoing independent Claim 40 follows together with the basis in specification indicated:

Claim 3 claims calcium stearate as C14 – C18 monocarboxylic acid based on page 5, line 31. Claim 6 is dependent upon dependent claim 3 and claims a composition wherein the surfactant is an anionic based upon page 10, lines 4 – 5, and Example 1. Claim 7 is dependent upon dependent Claim 6 and claims a composition wherein the anionic surfactant is sodium cocoyl N-methyl taurate based upon page 10, lines 5 and 6, and Example 1. Claim 33 is dependent upon dependent Claim 3 and claims compositions wherein the particulate material is present in an amount 15% to 41% by weight based upon page 12, line 28, and the surfactant is an anionic surfactant based upon page 10, line 5. Claim 39 is dependent on Claim 40 and claims compositions wherein the emollient is macadamia seed oil based upon page 7, lines 13 and 14; the surface active agent is sodium cocopyl N-methyl taurate based upon page 10, lines 5 and 7; the insoluble carboxylic acid salt is calcium stearate based upon page 5, line 31; the particulate material

is a mixture of starch and sodium chloride based upon page 5, line 31, to page 6, line 1; and the composition is anhydrous based upon page 13, lines 6 and 7; said composition being exemplified by Example 1 on page 16. Claim 41 is dependent upon independent Claim 40 and claims compositions wherein the proportion of surfactant is 0.4% to 3.0% based upon page 10, lines 4 – 5 and line 11, and the particulate mixture includes sodium chloride based upon page 5, line 32 to page 6, line 1, said composition being exemplified by Example 1 on page 16. Claim 42 is dependent upon independent Claim 40 and claims compositions wherein the proportion of the surfactant is 2.0% to 8.0% based upon page 10, line 13, and page 6, lines 21 – 22, and particulate mixture includes pumice based upon page 5, line 32, to page 6, line 1, and Example 2. Lastly, Claim 43 is dependent upon Claim 40 and claims compositions suited for the face and body containing 4.0% to 8.0% surfactant based upon page 6, lines 19 to 20.

As described by generic Claim 40, the claimed invention relates to a preferred version of the exfoliating composition for cleansing and conditioning the skin of hands, face, heels/knees/elbows and/or the body of a human being described at page 4, line 26, to page 5, line 9, in the form of a cream or extrudable paste (page 5, line 4) comprising , by weight, 40% to 60% of an emollient material consisting of a major proportion of an emollient oil and a minor proportion of a hydrophobic compound selected from the group of C12 to C18 fatty acids, alcohols, esters and mixtures thereof (page 5, lines 27– 30); a water-soluble surface active agent selected from the group of anionic, nonionic, amphoteric, zwitterionic and cationic surfactants in a proportion in the range of 0.4% to 8% by weight sufficient to leave a thin film of emollient on the treated skin without a greasy after-feel upon rinsing said composition from the skin with tepid water and drying (page 4, line 28, to page 5, line 1); a magnesium or calcium salt of a C14 – C18 monocarboxylic acid (page 4, lines 17 – 18) in a weight ratio of emollient material to said monocarboxylic acid salt in the range of 4:1 to 2.5:1 that is adequate to produce an extrudable paste or cream (page 4, lines 22 – 24); 10% to 45% of skin compatible particulate material (page 12, line 27) comprising a mixture of 8% to 20% of a starch material (page 12, line 30) with a particulate material selected from the group of sodium chloride, pumice, talc and vegetable seed

flour (page 5, line 31 to page 6, line 1); and 0% to 10% of water (page 13, lines 6 – 8), said composition being effective to cleanse and lubricate the skin when it is applied to and massaged into the skin, thereafter rinsed from the skin with tepid water and the skin is dried (page 4, lines 12 – 16).

The significant characteristics of the claimed composition are:

- (1) the form, i.e., extrudable paste or cream (page 4, lines 22 – 23);
- (2) the composition, i.e., a mixture of: (a) emollient material consisting of a major proportion of emollient oil and a minor proportion of hydrophobic fatty material; (b) a controlled proportion of surfactant selected from claimed range calculated to deposit a skin softening amount of fatty material on skin (page 4, line 28, to page 5, line 1); (c) 0% - 10% water (page 13, lines 6 – 8); (d) thickened with a calcium or magnesium fatty acid salt in a proportion correlated with the proportion of fatty material that is adequate to produce the desired paste or cream form (page 11, lines 10 – 14); and (e) containing a stable suspension of a particulate mixture of starch and a second particulate therein;
- (3) stability against separation in the temperature range of 4 C. to 50 C.(page 6, line 5);
- (4) the use, i.e., effective to cleanse, moisturize and soften skin without a greasy after-feel when the composition is applied to and massaged into the skin, rinsed off with water and the skin is dried due to use of a controlled amount of detergent (page 4, lines 6-9);
- (5) additionally, being environmentally innocuous in use, particularly when the particulate mixture consists of starch and sodium chloride or vegetable seed flour or talc (page 12, lines 19 – 25, and page 5, line 31, to page 6, line 1);

Thus, the important characteristics of the claimed compositions are the paste or cream physical form of a skin exfoliating composition comprising a calcium or magnesium fatty acid salt thickened mixture of emollient correlated with a proportion of fatty material sufficient to produce a paste or cream form, surfactant in a proportion to deposit the desired film of fatty material on the skin, a specific particulate mixture and, optionally water that is effective to cleanse and moisturize the skin in use and is stable against separation in the temperature range of 4 C. to 50 C. and, optionally, is environmentally innocuous.

Further, the generic claim defines the important parameters in order to obtain said desirable skin cleansing and conditioning compositions; i.e., (a) controlled amount of a surfactant within the claimed range that leaves an emollient oil film in use without a greasy after-feel; (b) use of a magnesium or calcium C14 – C18 monocarboxylic acid salt in a proportion selected from claimed ratio range that is sufficient to thicken the emollient material and effective to produce a stable paste or cream; (c) use of the claimed proportion of particulate materials that includes 8% to 20% by weight of a starch material with another specific claimed particulate material and (d) 0% to 10% by weight a water.

The outstanding cleansing and conditioning performance of the claimed compositions is illustrated by results of reported evaluation by panel of women of the composition of Example 1 against women's favorite skin conditioning brand set forth at pages 17 and 18 of the specification. Surprisingly, the claimed compositions were preferred 100% of the time when compared to the user's favorite skin composition product.

(vi) Grounds of rejection to be reviewed on appeal

The express grounds of rejection to be reviewed on appeal are set forth below verbatim using the exact words of Examiner set forth in Final Rejection mailed 03/23/2004:

“1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 3, 6, 33, and 40-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kellner in view of Barker et al. (of record).

3. Kellner teaches water and oil emulsion solid cosmetic compositions. The composition comprising up to 30% of emollient oil, both natural and synthetic oil may be employed (see, particularly, col. 9, line 29 to col. 11, line 62. Kellner further discloses that addition emollient material, such as fatty alcohol, wax, etc., as oil phase gelling agent may be employed up to 30% (see, particularly, col. 2, lines 66-67; col. 7, line 45 to col. 9, line 26). Kellner further teaches that up to 20% of primary gelling agent may used, wherein the preferred primary gelling agent are salt of fatty acid, particularly, calcium stearate (see col. 2, lines 24-65). Surfactants up to 20% are desirable in the composition. Surfactants, including cationic, anionic nonionic and zwitterionic surfactants are suitable (see, col. 16, line 9 to col. 19, line 34). The composition may comprising up to 50% of particulate matter, the particulate matter may be organic or inorganic, such as corn starch, mica, etc. (see col. 19, line 37-61). The water in the composition may range from 5% to 95% (see particularly, the claims).

4. Kellner does not teach expressly the particular percentage of each and every ingredient herein claimed, or the employment of particular ingredients, such as corn starch, calcium stearate, or the employment of sodium chloride as a particular ingredients.

5. However, Barker teaches sodium chloride particulate are known to be useful in cleansing composition (see claim 5).

Therefore, it would have been *prima facie* obvious to a person of ordinary skill in art, at time the claimed invention was made to make a composition with the particular percentages of each and every components herein since the percentage range herein defined are either encompassed by, or overlapped with the range disclosed by Kellner. Note it is well settled that in the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima*

facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976; In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). Also see MPEP 2144.05. The employment of the particular ingredients such as corn starch or calcium stearate is obvious since they are known to be useful in the composition. The employment of such components in the composition is seen to be selection form amongst equally suitable material and as such obvious. Ex parte Winters, 11 USPQ 2nd 1387 (at 1388). The employment of sodium chloride particulate is known to be useful in cleansing composition.

6. Claims 7, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kellner for reasons discussed above, and in further view of McAtee et al. ((US 6,153,208, claim 7) and Touzan et al. (U.S. 6,033,647, claim 38, 39).
7. Note Kellner does not teach expressly the employment of the particular oil, or surfactant herein.

However, McAtee disclosed that sodium cocoyl methyl taurate is similarly useful as other anionic surfactant in cleansing composition. (col. 20, lines 1-13)

Therefore, it would have been prima facie obvious to a person of ordinary skill in the art, at the time the claimed the invention was made, to employ sodium cocoyl methyl taurate because sodium cocoyl methyl taurate is known to be useful as anionic surfactant in cosmetic composition.”

N.B. The above is verbatim rejection of the Examiner with all of errors in grammar and punctuation uncorrected, i.e., errors which reflect adversely on the quality of work of Patent Office herein.

(vii) Argument

The issues follow:

- I. Are claims 3, 6, 33 and 40 – 43 unpatentable under 35 U.S.C. 103(a) as being obvious over Kellner in view of Barker et al.?
 - A. Would a person skilled in relevant art accept as true Kellner’s teaching that “... sodium, ... magnesium, calcium salts of stearic acid....” are equivalents as “Primary Carboxylated Salt Gelling Agents in Kellner’s cosmetic stick compositions?
 - B. Would a person skilled in relevant art question the credibility Kellner after

noting that all of the 13 examples in Kellner contain significant proportions of butylene glycol, an ingredient not referred to elsewhere in the specification?

II. Is claim 7 unpatentable under 35 U.S.C. 103(a) for being obvious over Kellner in further view of McAtee et al. (US 6,153,208)?

III. Is claim 39 unpatentable under 35 U.S.C. 103(a) as being obvious over Kellner in further view of McAtee et al. (US 6,153,208) and Touzan et al. (US 6,033,647)?

For each ground of rejection herein, the claims rejected as a group shall stand or fall together. Further, Appellant affirms that none of the nine (9) claims appealed hereunder are separately patentable from group that is rejected.

I. Rejection Under 35 U.S.C.. 103(a) As Obvious From Kellner In View of Barker

Claims 3, 6, 33 and 40 –43 are rejected “under 35 U.S.C. 103(a) as being unpatentable over Kellner in view of Barker et al.” The Examiner states that “Kellner teaches water and oil emulsion solid cosmetic compositions” that may include Appellant’s essential claimed emollient, surfactant, insoluble fatty acid salt, particulates and water ingredients in proportions within ranges disclosed by Kellner and concludes that “it would have been prima facie obvious to a person ordinary skill in the art” to make Appellant’s claimed compositions.

IA. Appellant respectfully disagrees with the Examiner’s rejection because the Examiner’s rejection does not take into account the following differences between Appellant’s claimed compositions and compositions described by Kellner reference and ramifications associated with differences:

- (1) Kellner compositions are in form of solid or stick (col. 1, lines 29 – 53, the 9 examples and claim 1) and Appellant’s compositions are in form of cream or

extrudable paste (page 11, line 17, and claim 40).

- (2) The Kellner compositions are “water and oil emulsion solid cosmetic compositions” (col. 1, line 56-57, and claim 1) in the form of a solid gel comprising water and a carboxylated gelling agent (col. 2, lines 24-63 and the 9 examples) and Appellant’s compositions are suspensions of particulates in emollient materials thickened with particles of calcium or magnesium C14 – C18 monocarboxylic acid salt (page 4, line 18, page 10, lines 29 – 31, and claim 40).
- (3) Kellner’s compositions are used to deliver pigments to the skin (claim 1 and Appendix B) and, optionally, to moisturize the skin (col. 1, lines 40 – 41); whereas Appellant’s compositions are effective to cleanse the skin (page 11, lines 16 – 24) and condition the skin by depositing fatty matter on the skin (page 6, lines 5 – 10).
- (4) Kellner’s concentration of surfactant is controlled to facilitate wetting of pigments being delivered to the skin (claim 1 and col. 11, lines 65 – 66, and Appendix D); whereas, Appellant’s surfactant concentration is controlled to deliver a controlled amount of emollient material to the skin (page 6, lines 10 – 22).
- (5) One object of Kellner is stick compositions which contain “appreciable amounts of water” (col. 1, lines 34 – 35 and 43-44) and the nine Kellner examples contain 37.7% - 50.4% by weight of water; whereas, Appellant’s compositions contain 0% to 10% by weight water (page 13, lines 7 – 8).

Considering the differences between compositions of Kellner and Appellant’s claimed compositions presented in points (1) – (5) above, Appellant concludes no person skilled in art of

making cosmetic compositions would or could consider Appellant's claimed compositions to be obvious from reading the Kellner patent.

In order to clarify the record herein regarding the invention of Kellner, Appellant's attorney reviewed the file history of Kellner and observed that U.S. 4,822,602 to Sabatelli was primary reference against Kellner. In Kellner's response to the first Office Action, Kellner describes^d his inventive compositions in distinguishing over primary Sabatelli reference as follows: "pigmented compositions for delivering color to skin... contain, in addition to the carboxylated salt gelling agent, a mixture of an aqueous phase gelling agent and an oil phase gelling agent... contain (3) a mixture of pigment and powders." Further, the file history reveals that Kellner was allowed after Kellner submitted a Declaration of David Kellner showing that the Kellner compositions containing **a pigment and sodium stearate gelling agent** with an additional mixture of an additional water soluble gelling agent and oil soluble oil soluble gelling agent exhibited improved stability at 50°C. as compared to Sabatelli compositions that did not contain a mixture of the additional water soluble gelling agent and the oil soluble gelling agent. Again, Appellant states that the facts show that the Examiner's overly broad interpretation of Kellner reference to reject Appellant's invention herein does reflect the record herein and is at variance the interpretation of Kellner by one skilled in cosmetic art.

In addition, it is Appellant's position that the Kellner's statement that sodium stearate and calcium or magnesium stearate are equivalent "Primary Carboxylated Salt Gelling Agents" (col. 2, lines 25 – 63) would not be accepted as true by a person skilled in art of making cosmetic compositions for the following reasons:

- (a) Merriam Webster's Collegiate Dictionary, Eleventh Edition, defines equivalent as follows: "corresponding or virtually identical esp. in effect or function."
- (b) Because Kellner does not identify the medium that is gelled by said primary gelling agent, one skilled in art would have to look to the nine exemplified compositions and discover that all of compositions were oil-in-water emulsions wherein the continuous aqueous medium that contained, by weight, 38% – 50% water, 6% - 13% butylene glycol (a water soluble material) and 3% - 4% nonionic detergent (PEG-20 methyl glucose glycosesequoisostearate), was gelled with 6% - 8% by weight sodium stearate and 0.9% - 5% of PPC (an additional water-soluble gelling agent). The continuous aqueous medium comprised between 59% to 74.5% by weight of the nine exemplified compositions. (For record, Kellner's Example 1 contains 0.62% by weight of aluminum stearate as an additional water soluble gelling agent.) **Significantly, sodium stearate was primary gelling agent in all examples of Kellner wherein medium gelled was the aqueous medium and no exemplified composition contained calcium or magnesium stearate as gelling agent. Thus, one skilled in the art would conclude that Kellner's primary gelling agent gelled the aqueous medium.**
- (c) According to Evidence appendix (ix) a person skilled in cosmetic art knows from The Condensed Chemical Dictionary, Ninth Edition, by Hawley that sodium stearate is soluble in water and a gelling agent (page 801) and magnesium stearate is water insoluble (page 532). Similarly, CRC Handbook of Chemistry and Physics, 81st Edition by Lide shows that calcium stearate is water insoluble at page 3-227. Further,

the Affidavit Under 37 CFR 1.132 of James Hugh McLaughlin (the named inventor) of record confirms water solubility of sodium stearate and confirms water insolubility of calcium stearate.

- (d) According Evidence appendix (ix) herein wherein Affidavit Two Under 37 CFR 1.132 of James Hugh McLaughlin of record herein, reproduction of Kellner's Examples 1 and 2B containing sodium stearate produced compositions in form of a solid stick and when calcium stearate replaced sodium stearate no composition in form of a solid stick was obtained.
- (e) A review of file history of Kellner shows that U.S. 4,822,602 to Sabatelli was the primary reference against Kellner. Sabatelli shows cosmetic sticks based on soap gels (sodium stearate) are old and discloses and claims a water and oil cosmetic stick in Example I containing sodium stearate. The equivalents of sodium stearate are set forth column 7, lines 32 – 37, and do not include calcium or magnesium stearate. If calcium or magnesium stearate is an art recognized equivalent of sodium stearate, why were they not listed in Sabatelli?

The obvious conclusion based upon points (a) – (e) discussed above for a person skilled in art of cosmetic compositions is that the teaching of Kellner that sodium stearate and calcium stearate and magnesium stearate are equivalents as primary gelling agents in water and oil emulsion cosmetic compositions in form of solid stick is not true; and, therefore, the rejection herein that based upon Kellner's teaching of the equivalence of sodium stearate and calcium or magnesium stearate as gelling agents in water has no factual basis and cannot be sustained by the Board of Appeals. Furthermore, because Kellner is the primary

reference in all rejections herein, a rejection of claimed invention herein is not sustainable and the claimed invention is patentable under all of applicable laws.

The Examiner's response to foregoing facts as set forth in the Final Rejection mailed 03/23/2004 and in the Evidence appendix (ix) is set forth below for Honorable Board of Appeals:

With respect to applicant's point 2 with the 132 affidavit demonstrating that sodium stearate and calcium stearate are not useful as gelling agents in pure water. However, what applicant demonstrated is moot in view of the fact that the cosmetic composition disclosed comprise other ingredients such oil, surfactant which effect gelling properties of the composition.

The foregoing answer does not address the fact that substituting calcium stearate for sodium stearate in Kellner's Example 1 involves according col. 22, lines 56 – 67, of Kellner heating the water to 90°C., adding ascorbic acid, calcium stearate, butylene glycol , methyl paraben, PEG-20 methyl glycosesquioctanoate and PPC and mixing at “85° 90°C until the ingredients were dissolved and a milky solution was obtained...composition was poured into stick molds.” One skilled in art knows that the calcium stearate would never be dissolved in water and that a composition in the desired stick form will never be obtained. Further, the foregoing fact disproves Kellner's teaching that sodium stearate and calcium stearate are equivalent gelling agents, i.e., the sole basis for a rejection under 35 U.S.C. 103(a) herein.

Further, the second sentence of foregoing quotation of Examiner begs the question and is meaningless. What other ingredient(s) gels Kellner's Example 1 containing calcium stearate in place of sodium stearate? Aluminum stearate disclosed by Kellner as primary gelling agent (col. 2, line 59) is water insoluble and cannot work. PPC is disclosed as aqueous phase gelling agent in 1:1 ratio with water (col. 3, lines 7-21), but its 0.86% concentration by weight will not gel 41.03% by weight of water. The oil soluble gelling agents are, by weight, 1.5% synthetic wax,

5.70% isostearyl alcohol and 1.5% hydrogenated castor oil and will not gel 41.03% of water.

The Examiner is requested to state for the record what compound(s) gel Kellner's Example

1 composition containing calcium stearate in place of sodium stearate. The failure of Examiner to reply on the record will be taken as admission by the Examiner that Examiner concedes that Kellner's teaching that sodium stearate and calcium stearate are equivalent as gelling agents in water is not true and the rejection herein based upon Kellner is withdrawn.

If the Examiner and/or The Board of Appeal still do not agree that calcium and magnesium stearate are not equivalents of sodium stearate as gelling agents in the Kellner compositions, Appellant requests Examiner and each member of The Board of Appeal to acknowledge for the record and for purposes further appeal (1) the water solubility of the foregoing stearates and (2) the identity of gelling agent for continuous water phase in Kellner Example 1 that comprises Kellner sequences 6 – 13 plus 0.62% by weight of aluminum stearate (total weight percentage of 67.18%) when calcium stearate is substituted for sodium stearate therein. (Please note that the oil phase of Kellner's Example 1 consists of, by weight, 12.44% dimethicone, 0.39% polyglyceryl 6-polyricinoleate, 3.51% cyclomethicone, 0.1% propyl paraben and 0.85% fragrances which is gelled with a mixture, by weight, of 1.50% synthetic wax, 5.7% isostearyl alcohol and 1.5% hydrogenated castor oil for a total 25.99% by weight of the oil phase of Kellner's Example 1. The pigments total 7.18% by weight and are suspended in oil in water emulsion.) For record, the aqueous phase gelling agents in the example are aluminum stearate, PPC and sodium or calcium stearate according to Kellner.

IB. Furthermore, a person of ordinary skill in art reading Kellner would notice all of Examples of Kellner contain butylene glycol and seemingly would conclude that butylene glycol is essential ingredient in water and oil emulsion solid stick compositions of Kellner. However, one skilled in art would find no other mention of butylene glycol in Kellner specification. **This glaring omission reflects adversely on credibility of all of following: Kellner; U. S. Patent Office; the Examiners who allowed the Kellner application; and the Examiners herein for use of Kellner as a reference.** For the record, Appellant's exemplified compositions do not contain butylene glycol and said glycol is nowhere disclosed in Appellant's specification..

In summary, it is Appellant's position that the foregoing discussion of relevant facts proves that a person of ordinary skill in cosmetic art would agree with Appellant's position that sodium stearate, calcium stearate and magnesium stearate are not equivalents as gelling agents for gelling the continuous aqueous phase in Kellner's cosmetic composition in the form of solid sticks. One skilled in the art of cosmetic compositions would know that the following the teachings of Kellner and replacing sodium stearate with calcium stearate in any or all of Kellner's nine examples would not produce a composition in the desired stick form because calcium stearate could not gel the continuous water phase. Further, one skilled in the relevant cosmetic would know that the rejection herein based upon Kellner's disclosure is not valid for being contrary to the facts. Thus, the one skilled in relevant art would know rejection herein is contrary to the relevant facts and should not be sustained and Appellant's invention described herein should be issued as a patent.

II. The addition Barker to Kellner does overcome shortcomings of Kellner discussed above. Barker relates to a skin cleansing and wrinkle reducing cream (col. 1, line 53) that employs an oleaginous base having “distributed therein a plurality of water-soluble, skin abrading granules... sodium chloride” (col. 1, lines 53 – 64). The Examiner relies on Barker to show the use of sodium chloride in skin compositions. Barker is relevant because the disclosed skin composition is paste form and it contains two of Appellant’s essential ingredients, i.e., fatty material and sodium chloride. Appellant made reference to Barker in Appellant’s specification (page 3, lines 20 – 23, and Example 16). More particularly, Appellant’s Example 16 is reproduction of Barker’s Example I with the stated result showing that Barker’s composition was unstable because the sodium chloride precipitated in less than one hour (page 23, lines 11 – 15). Moreover, Barker alludes to the stability problem in column 3, lines 30 – 37, wherein his solution is to keep emollient material and salt separate and in use dipping the fingers into emollient and then into salt thereby forming the composition on the fingers. Therefore, Barker is relevant and further evidence that Appellant’s stable cream compositions containing particulate sodium chloride are novel and unobvious. To the extent Barker in combination with Kellner suggests incorporation of sodium chloride in Kellner’s oil and water emulsion compositions, it would render the sodium chloride particles ineffective because they dissolve in water and interfere with the gelling of the aqueous phase and formation of Kellner’s solid stick.

II. Rejection of Claim 7 Under 35 U.S.C. 103(a) Over Kellner In Further View McAtee et al. (US 6,153,208)

The addition McAtee et al. to Kellner does obviate the shortcomings of Kellner discussed heretofore. McAtee et al. like Kellner relates non-analogous subject matter, i.e., a single use,

disposable cleaning and conditioning article comprising a water insoluble paper layer (col. 12, line 30) joined to a second layer of woven or non-woven materials (col. 14, lines 44 – 55) impregnated with at least one surfactant and a conditioning material, e.g., an emollient material. Again, the common denominator is that McAtee's dry, impregnated pad and Kellner's water and oil emulsion solid stick are applied to the skin, but neither reference is relevant to Appellant's skin composition in the form of a paste or cream that contains a suspension of particulate material to cleanse the skin and controlled proportions of emollient and surfactant designed to leave a film of emollient material on the skin after the composition has cleaned the skin and is rinsed therefrom. Again, Appellant maintains that inventive paste or cream composition is unlike the two layer cleaning pad of McAtee et al. or the oil in water emulsion pigmented solid stick of Kellner and a person of ordinary skill in the cosmetic art looking at Kellner and McAtee et al. would not find Appellant's inventive paste or cream composition for cleansing and conditioning the skin to be obvious. Thus, the reference combination is not suggested by the references themselves, but is based upon 20/20 hindsight reconstruction of references by the Examiner in view Appellant's specification.

III. Rejection of Claim 39 under 35 U.S.C. 103(a) over Kellner In Further View of Touzan et al.
(US 6,033,647)

The addition of Touzan et al. to Kellner does not overcome the shortcomings of Kellner discussed heretofore. Touzan, like McAtee et al., discloses non-analogous self foaming cream composition for treating the hair or skin comprising an oil in water emulsion gelled with an emulsifying polymer (col. 2, lines 29 – 55) that is pressurized with a propellant gas (col. 6, lines 44 – 54) and that is delivered in the form of a cream that foams when spread on the skin (col. 2,

lines 61 – 65). The exemplified compositions contain 74 – 75% by weight of water and less than 2% by weight of surfactant and are unlike either Appellant’s cream or paste containing 0 – 10% by weight of water or Kellner’s exemplified oil and water emulsion solid stick compositions containing 37% - 50% by weight of water. Touzan et al. is cited by the Examiner for it’s disclosure of the use of macademia oil in a composition that is applied to the skin. Again the reference combination of the Kellner oil and water emulsion solid stick with Touzan et al’s aerosol water and oil emulsion liquid is not suggested by references themselves and is unlike Appellant’s paste or cream mixture of emollient, surfactant and particulate mixture thickened with calcium and magnesium C14 – C18 fatty acid salt. Again, the reference combination is only based upon the Examiner’s 20/20 hindsight reconstruction of the prior art in view of Appellant’s invention, an invalid ground of rejection.

For the record, the decisions In re Wertheim, 541 F.2d 257, 191 USPQ 90, and In re Woodruff, 919 F.2d 1575, 16 USPQ 1934, are not applicable to facts presented in the instant application and the decision in Ex parte Winters, 11 USPQ2nd 1387, is rebutted by superior conditioning properties of claimed compositions set forth in Table I at page 18 of Appellant’s specification versus the recognized competitive products currently in the marketplace. The decisions in In re Keller, 642 F.2nd 413, 231 USPQ 871 (CCPA) and In re Merck & Co., 800 F.2nd 1091, 231 USPQ 375 (Fed.Cir. 1986) are noted but are not relevant to the rejection herein where as proved herein that the primary references teaches a person of ordinary skill in cosmetic art against the inclusion one of Appellant’s essential ingredients, i.e., calcium and magnesium C14 – C18 acid salt, and no other reference teaches the use of said ingredient in a relevant cosmetic

composition. Finally, according to the express terms of 37 C.F.R. 1.132, an affidavit thereunder is proper to traverse a rejection based upon a cited reference.

In summary, the foregoing discussion proves that cited references to Barker et al., McAtee et al. and Touzan et al. do not remedy the shortcomings of the primary Kellner et al. reference set forth above, e.g., no credible disclosure of a insoluble calcium or magnesium C14 – C18 monocarboxylic acid salt as a thickening agent for a mixture of emollient material, surfactant and particulate mixture including starch in a composition in cream or extrudable paste form for cleansing and conditioning the skin of the user. In fact the credible portion of the disclosure of Kellner et al. teaches one of ordinary skill in cosmetic art not to use a calcium or magnesium stearate in compositions of Kellner et al. for any purpose. Furthermore, even if one skilled in cosmetic art accepts all of the teachings of Kellner et al. as true, the oil and water emulsion solid stick compositions of Kellner for applying pigments to the skin of a user do not fairly suggest Appellant's composition in the form of a cream or extrudable paste comprising a mixture of emollient material, a controlled proportion of surfactant and particulate mixture, including starch, thickened by a calcium or magnesium C14 – C18 monocarboxylic acid salt for cleaning and conditioning the skin of the user. Further, the addition Barker et al. or McAtee et al. or Touzan et al. to Kellner et al. does remedy the shortcomings of Kellner et al. Thus, the rejection herein based upon Kellner et al. as primary reference is fatally defective because it does not disclose or suggest Appellant's claimed composition in accordance with 35 U.S.C. 103(a) and must be withdrawn. See In re Berg, 65 USPQ 2nd 2003 (Fed.Cir. 2003).

In conclusion, Appellant has invented a novel and useful skin cleansing and conditioning composition that is new, useful and unobvious from any fair combination of the references cited

by the Examiner. Further, the claimed compositions in use are very effective according to the evaluation set forth in the Table at page 17 – 18 of the specification. Accordingly, the claimed are in accord with 35 U.S.C. 101 – 103 and allowance of claimed invention is respectfully solicited.

Respectfully submitted,

Richard N. Miller

Richard N. Miller
Registration No. 22,977

Enc. (viii) Claims appendix

(ix) Evidence appendix

- A. Affidavit Under C.F.R. 1.132 of James Hugh McLaughlin with attachments entitled from The Condensed Chemical Dictionary, Ninth Edition and from CRC Handbook of Chemistry and Physics, 81st Edition
- B. Affidavit Two Under C.F.R. 1.132 of James Hugh McLaughlin
- C. Page 5 from Examiner's Final Rejection

(x) Related proceedings appendix

(viii) Claims Appendix

Claims on Appeal

Claim 3 A composition according to Claim 40 wherein said C14 – C18 monocarboxylic acid salt is calcium stearate.

Claim 6. A composition according to Claim 3 wherein the water-soluble surface active agent is an anionic surfactant.

Claim 7. A composition according to Claim 6 wherein said anionic surfactant is sodium cocoyl N-methyl taurate.

Claim 33. A composition according to Claim 3 wherein said particulate material is present in an amount of 15% to 41% by weight, and said water soluble surface active agent is an anionic surfactant.

Claim 39. A composition according to Claim 40 wherein the emollient oil is macadamia seed oil, the water-soluble surface active agent is sodium cocoyl N-methyl taurate, the water-insoluble monocarboxylic acid salt is calcium stearate and the particulate material is a mixture of starch and sodium chloride and the resultant composition is substantially anhydrous.

Claim 40. A cosmetic exfoliating composition for use in cleansing and conditioning the skin of the hands, face, heels/knees/elbows and/or the body of a human being in the form of a extrudable paste or cream that comprises: (A) 40% to 60% by weight of emollient material consisting of a major proportion of emollient oil selected from the group consisting of animal oils, vegetable or plant derived oils, hydrocarbon oils, silicone oils and mixtures thereof and a minor proportion of an emollient hydrophobic compound selected from the group consisting of C12 –C18 fatty acids, C12 – C18 fatty alcohols, C12 – C18 fatty esters, Shea butter, lanolin or a lanolin derivative, lecithin and mixtures thereof; (B) a water-soluble surface active agent selected from the group consisting of anionic, nonionic, amphoteric, zwitterionic and cationic surfactants in a

proportion selected from the range of 0.4% to 8.0% by weight, said proportion being effective to deposit a skin softening amount of emollient material on the treated skin without a greasy after-feel when said composition is rinsed from skin with water and the skin is dried; (C) a calcium or magnesium salt of a C14 – C18 monocarboxylic acid wherein the weight ratio of emollient material to said monocarboxylic acid salt is in the range of 4:1 to 2.5:1, said proportion being adequate to produce a composition in the form of a stable, extrudable paste or cream; (D) 10% to 45% by weight of a non-irritating, mildly abrasive, skin compatible, particulate material that is effective to cleanse and lubricate the skin without abrading the skin, said particulate material including a mixture of 8% to 20% by weight of a starch material selected from the group consisting of starches and enzyme or acid hydrolyzed starches with another particulate material selected from the group consisting of sodium chloride, pumice, talc and vegetable flour; and (E) 0% to 10% by weight of water; said composition being effective to cleanse, soften, smooth and moisturize the skin when the composition is applied to and massaged into the skin, thereafter rinsed from the skin with tepid water and the skin is dried.

Claim 41. A composition according to Claim 40 particularly suitable for use in cleansing and conditioning the hands of a human being wherein the proportion of the water-soluble surface active agent is 0.4% to 3.0% by weight and the particulate mixture includes sodium chloride.

Claim 42. A composition according to Claim 40 particularly suitable for use in cleansing and conditioning the heels/knees/elbows of a human being wherein the proportion of the water-soluble surface active agent is 2.0% to 8.0% by weight and the particulate mixture includes pumice.

Claim 43. A composition according to Claim 40 particularly suitable for use in cleansing and conditioning the face and body of a human being wherein the proportion of the water-soluble surface active agent is 4.0% to 8.0% by weight.

(ix) Evidence appendix

INDEX AND STATEMENT WHERE THJE LISTED ITEM WAS ENTERED

- A. Affidavit Under 37 C.F.R. 1.132 of James Hugh McLaughlin with The Condensed Chemical Dictionary, Ninth Edition, Title Page and Pages 532 and 801, and CRC Handbook Of Chemistry and Physics, 81st Edition, Page 3-1 and 3-227 as attachments
(Entered with the Amendment Under 37 C.F.R. 1.112 dated December 19, 2003)
- B. Affidavit Two Under 37 C.F.R. 1.132 OF James Hugh McLaughlin
(Entered with the Amendment Under 37 C.F.R. 1.116 dated July 21, 2004)
- C. Page 5 of Final Rejection of the Examiner mailed 03/23/2004

(1x) Evidence appendix - Item A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.: 09/964,143) Art Unit 1617
Applicants: JAMES HUGH McLAUGHLIN) Examiner:
Filed: September 25, 2001) Shengjun Wang
For: EMOLlient SKIN CONDITIONING CREAM AND METHOD)

Assistant Commissioner of Patents
U.S. Patent and Trademark Office
Washington, D.C. 20231

Affidavit Under 37 CFR 1.132

STATE OF CONNECTICUT)
COUNTY OF Windham) SS: Woodstock
)

JAMES HUGH McLAUGHLIN, being of full age and duly sworn according to law, deposes and says:

1. I am employed by Crabtree & Evelyn, Ltd., at 102 Peake Brook Road, P.O. 167, Woodstock, as a Creative New Product Developer. I am the inventor of the invention described and claimed in the above-identified patent application.
2. I received a Bachelor of Science Degree in Chemistry from Fairleigh Dickinson University, Rutherford, New Jersey, in 1964.
3. My work experience follows:
 - a. 1952 – 1968 - Unilever Company; Edgewater, New Jersey. Technician in the Perfume Department and as a Technician, Chemist and Section Manager in the New Product Development Group in Research & Development Department..
 - b. 1969 – 1983 - Center For New Product Development, New York, New York. Chief Chemist and principal.

- c. 1983 – 1998 – James H. McLaughlin New Products, Inc., Brooklyn, Connecticut.
Chief Chemist and Owner.
 - d. 1999 – to date – Crabtree & Evelyn, Ltd., Woodstock, Connecticut. Director of Creative New Product Development and Chief Chemist.
4. I noted that U.S. Patent 6,042,815 (Kellner et al.), the primary reference against the invention set forth in the subject application, teaches at column 2, lines 25 – 63, “Examples of gelling agents which may be used... are sodium, potassium, aluminum, magnesium, or calcium salts of stearic... acids... Preferably... sodium stearate.” Following those teachings, I performed the following experiments:
- a. In accordance with procedure set forth in Example 1 of Kellner et al., I heated 950 grams of water to 185° F. in a beaker and added 50 grams of sodium stearate powder with propeller agitation. The agitation was continued for five minutes and, thereafter the mixture was cooled to 75° F. The resultant composition was a solid.
 - b. I repeated the experiment outlined in a above using 900 grams of water and 100 grams of sodium stearate powder and again a solid composition was obtained upon the cooling the mixture from 185° F. to 75° F.
 - c. I repeated the experiment outlined in a above using 950 grams of water and 50 grams of calcium stearate powder with the result that the calcium stearate powder formed an upper layer on the water when agitation was discontinued.
 - d. I repeated the experiment outlined in a above using 900 grams of water and 100 grams of calcium stearate powder and again the calcium stearate particles formed an upper layer on the water when the agitation was discontinued.
5. Based upon the foregoing experiments, I concluded that sodium stearate and calcium

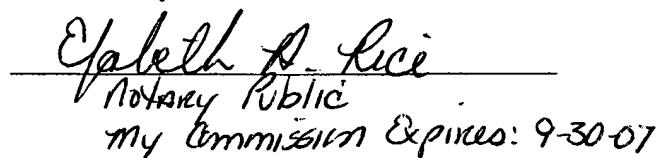
stearate are not equivalents as gelling agents for water as alleged by Kellner et al. This conclusion is in accord with the facts set forth at pages 532 and 801 of The Condensed Chemical Dictionary, Ninth Edition and page 3-227 of the CRC Handbook of Chemistry and Physics, 81st Edition, said pages being appended to this Affidavit. Page 801 of The Condensed Chemical Dictionary states that sodium stearate is water soluble whereas pages 3-1 and 3-227 of CRC Handbook of Chemistry and Physics states that calcium stearate is water-insoluble and has a melting point of 179.5°C. Further, page 532 of the The Condensed Chemical Dictionary states that magnesium stearate has a melting point of 88.5°C. and is water-insoluble and page 3-227 of the CRC Handbook of Chemistry and Physics states that aluminum stearate has a melting point 118°C. and is water-insoluble. In summary, sodium stearate is water soluble and in concentrations of 5 – 10% by weight in water forms a solid gel whereas calcium stearate and magnesium stearate are water insoluble and in concentrations of 5 – 10% by weight in water do not form a gel. Therefore, the teaching in Kellner et al. that the sodium stearate and calcium stearate and magnesium stearate are equivalent gelling agents with water is **FALSE** and would not be believed by the ordinary person skilled in art.



JAMES HUGH McLAUGHLIN

Enc. Title page and pages 3-1 and 3-227 of CRC Handbook of Chemistry and Physics
Title page and pages 532 and 801 of The Condensed Chemical Dictionary

Sworn to and subscribed before me
this 11th day of December, 2003.



Elizabeth A. Rice
Notary Public
My Commission Expires: 9-30-07

The
Condensed Chemical
Dictionary

NINTH EDITION

Revised by

GESSNER G. HAWLEY

*Coeditor, Encyclopedia of Chemistry
Coauthor, Glossary of Chemical Terms*

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VAN NOSTRAND REINHOLD COMPANY
NEW YORK CINCINNATI ATLANTA DALLAS SAN FRANCISCO
LONDON TORONTO MELBOURNE

varnishes, and paper (filler); animal and vegetable oils (bleaching agent); odor absorbent; filter medium; catalyst and catalyst carrier; anticaking agent in foods. See also asbestos.

magnesium silicofluoride. See magnesium fluosilicate.
magnesium stannate $MgSnO_3 \cdot 3H_2O$.

Properties: White crystalline powder. Soluble in water. Approximate temperature of decomposition 340°C.

Hazard: Toxic by inhalation. Tolerance, 2 mg per cubic meter of air.

Use: Additive in ceramic capacitors.

magnesium stearate $Mg(C_{18}H_{35}O_2)_2$, or with one H_2O . Technical grade contains small amounts of the oleate and 7% magnesium oxide MgO .

Properties: Soft white light powder; sp. gr. 1.028; m.p. 88.5°C (pure), 132°C (technical); tasteless; odorless. Insoluble in water and alcohol. Nontoxic. Nonflammable.

Grades: Technical; U.S.P.; F.C.C.

Containers: Fiber cans; multiwall paper sacks.

Uses: Dusting powder; lubricant in making tablets; drier in paints and varnishes; flattening agent; in medicines; stabilizer and lubricant for plastics; emulsifying agent in cosmetics; in foods as anticaking agent, binder, emulsifier.

magnesium sulfate (a) $MgSO_4$; (b) (epsom salts) $MgSO_4 \cdot 7H_2O$.

Properties: Colorless crystals; saline, bitter taste; neutral to litmus; sp. gr. (a) 2.65; (b) 1.678; (a) decomposes 1124°C; (b) loses 6 H_2O at 150°C; 7 H_2O at 200°C; soluble in glycerol; very soluble in water; sparingly soluble in alcohol. Low toxicity. Noncombustible.

Derivation: (a, b) Action of sulfuric acid on magnesium oxide, hydroxide or carbonate; (b) mined in a high degree of purity.

Grades: Technical; C.P.; U.S.P.; F.C.C.

Uses: Fireproofing; textiles (warp-sizing and loading cotton goods, weighting silk, dyeing and calico printing); mineral waters; catalyst carrier; ceramics; fertilizers; paper (sizing); cosmetic lotions; dietary supplement; medicine (antidote).

magnesium sulfide MgS .

Properties: Red brown crystalline solid; sp. gr. 2.84; decomposes above 2000°C. Decomposes in water. Low toxicity.

Uses: Source of hydrogen sulfide; laboratory reagent.

magnesium sulfite $MgSO_3 \cdot 6H_2O$.

Properties: White, crystalline powder; slightly soluble in water; insoluble in alcohol. Sp. gr. 1.725; m.p., loses 6 H_2O at 200°C; b.p., decomposes. Low toxicity.

Derivation: Action of sulfurous acid on magnesium hydroxide.

Uses: Medicine; paper pulp.

magnesium tetrahydrogen phosphate. See magnesium phosphate, monobasic.

magnesium thiosulfate (magnesium hyposulfite)
 $MgS_2O_3 \cdot 6H_2O$.

Properties: Colorless crystals; soluble in water; insoluble in alcohol. Sp. gr. 1.818; loses 3 H_2O at 170°C. Use: Medicine.

magnesium titanate Mg_2TiO_4 . Used in electronics.

magnesium trisilicate. U.S.P. specifies not less than 20% MgO and 45% SiO_2 ; similar to the F.C.C. requirements under magnesium silicate. See also talc.

Properties: Fine, white, odorless, tasteless powder; free from grittiness. Insoluble in water and alcohol; readily decomposed by mineral acids. Noncombustible.

Derivation: By reaction of soluble magnesium salts with soluble silicates.

Grades: Technical; U.S.P.

Uses: Industrial odor absorbent; decolorizing agent; antioxidant; medicine.

magnesium tungstate (magnesium wolframate)
 $MgWO_4$.

Properties: White crystals; sp. gr. 5.66; soluble in acids; insoluble in water and alcohol. Low toxicity. Noncombustible.

Derivation: Interaction of solutions of magnesium sulfate and ammonium tungstate.

Uses: Fluorescent screens for x-rays; luminescent paint.

magnesium zirconate $MgO \cdot ZrO_2$.

Properties: Powder; sp. gr. 4.23; m.p. 2060°C.

Use: Electronics.

magnesium zirconium silicate $MgZrSiO_5$, or $MgO \cdot ZrO_2 \cdot SiO_2$.

Properties: White solid; m.p. 1760°C; density 80 lb/cu ft; insoluble in water; alkalies; slightly soluble in acids. Noncombustible.

Containers: 80-lb paper bags; 500-lb drums.

Uses: Electrical resistor ceramics; glaze opacifier.

"Magnesol."⁵⁵ Trademark for a synthetic adsorptive magnesium silicate.

Uses: Solvent purification, clarification and recovery; oil refining; deodorizing and decolorizing of oils and fats.

magnetic separation. Removal of bits of iron and other tramp metal from a material as it passes to a screen or classifying device by means of a magnet placed close to the stream of particles.

magnetite (lodestone; iron ore, magnetic) Fe_3O_4 , often with titanium or magnesium. A component of taconite (q.v.).

Properties: Black mineral; black streak; submetallic, or dull to metallic luster. Contains 72.4% iron. Readily recognized by strong attraction by magnet. Soluble in powder form in hydrochloric acid. Decomposes at 1538°C to ferric oxide Fe_2O_3 . Sp. gr. 4.9-5.2; hardness 5.5-6.5.

See also iron oxide, black.

magnetochemistry. A subdivision of chemistry concerned with the effect of magnetic fields on chemical compounds; analysis and measurement of these effects (e.g., magnetic moment and magnetic susceptibility) are important tools in crystallographic research and determination of molecular structures. Substances that are repelled by a magnetic field are diamagnetic (water, benzene); those that are attracted are paramagnetic (oxygen, transition element compounds). Diamagnetic materials have only induced magnetic moment; paramagnetic materials have permanent magnetic moment. Magnetochemistry has been useful in detection of free radicals, elucidation of molecular configurations of highly complex compounds, and in its application to catalytic and chemisorption phenomena. See also nuclear magnetic resonance.

magnetohydrodynamics (MHD). The behavior of high-temperature ionized gases passed through a magnetic field. A power-generating method using MHD involves an open cycle in which hot combustion gases

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Hazard: Se

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Purity: Tec
Derivation:
thiophosph
Hazard: To
by skin. 1
Cholineste
Use: Insecti
Note: Appr
of DDT.

maleic acid (OOCCH=CHCOOH)
Properties:
taste; faint
Superi

solidification; glass foam; pigments; drilling fluids; binder for foundry cores and molds; waterproofing mortars and cements; impregnating wood.

sodium silicoaluminate. See sodium aluminosilicate.

sodium silicofluoride. See sodium fluorosilicate.

sodium silico-12-molybdate. See sodium 12-molybdate.

sodium 12-silicotungstate. See sodium 12-tungstosilicate.

sodium silver chloride. See silver sodium chloride.

sodium silver thiosulfate. See silver sodium thiosulfate.

sodium alpha-sodioacetate. See alpha-sodiosodium acetate.

sodium sorbate $\text{CH}_3\text{CH}=\text{CHCH}=\text{CHCOONa}$. Combustible. Nontoxic.

Uses: Food preservative.

sodium stannate $\text{Na}_2\text{SnO}_3 \cdot 3\text{H}_2\text{O}$, or $\text{Na}_2\text{Sn}(\text{OH})_6$.

Properties: White to light tan crystals; soluble in water; insoluble in alcohol; decomposes in air. Aqueous solution slightly alkaline. Loses $3\text{H}_2\text{O}$ at 140°C . Derivation: (a) By fusion of metatannic acid and sodium hydroxide. (b) By boiling tin scrap and sodium plumbate solution.

Hazard: Toxic. Tolerance, 2 mg per cubic meter of air.

Uses: Mordant in dyeing; ceramics; glass; source of tin for electroplating and immersion plating; textile fireproofing; stabilizer for hydrogen peroxide; blueprint paper; laboratory reagent.

sodium stearate $\text{NaOOCCH}_{17}\text{H}_{35}$.

Properties: White powder with fatty odor. Soluble in hot water and hot alcohol; slowly soluble in cold water and cold alcohol; insoluble in many organic solvents.

Impurities: Varying quantities of sodium palmitate.

Grade: Technical.

Containers: 150-lb drums; 200-lb barrels.

Uses: Waterproofing and gelling agent; toothpaste and cosmetics; stabilizer in plastics.

sodium stearyl 2-lactylate.

Properties: White powder. Melting range $46\text{--}52^\circ\text{C}$. Nontoxic.

Derivation: Sodium salt of reaction product of lactic and stearic acids.

Uses: Emulsifier; dough conditioner; whipping agent in baked products, desserts, and mixes; complexing agent for starches and proteins.

sodium styrenesulfonate $\text{CH}_2\text{CH}_2\text{C}_6\text{H}_4\text{SO}_3\text{Na}$. White, free-flowing powder.

Use: Reactive monomer. See sodium polystyrenesulfonate.

sodium subsulfite. See sodium thiosulfate.

sodium succinate $\text{Na}_2\text{C}_4\text{H}_4\text{O}_4 \cdot 6\text{H}_2\text{O}$.

Properties: White crystals or odorless granules; soluble in water. Loses $6\text{H}_2\text{O}$ at 120°C .

Use: Medicine.

sodium sulfate, anhydrous Na_2SO_4 . See also salt cake.

Properties: White crystals or powder; odorless; bitter saline taste; sp. gr. 2.671; m.p. 888°C ; soluble in water and glycerol; insoluble in alcohol. Noncombustible; nontoxic.

• Derivation: (a) By-product of hydrochloric acid production from salt and sulfuric acid. (b) Purification of natural sodium sulfate from deposits or brines. (c) By-product of phenol manufacture (caustic fusion process); (d) Hargreaves process (q.v.).

Grades: Technical; C.P.; detergent; rayon; glass makers.

Containers: Bags; drums.

Uses: Manufacture of kraft paper, paperboard, and glass; filler in synthetic detergents; sodium salts; ceramic glazes; processing textile fibers; dyes; tanning; glass; pharmaceuticals; freezing mixtures; laboratory reagent; food additive.

sodium sulfate decahydrate (sodium sulfate, crystals; Glauber's salt) $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$.

Properties: Large transparent crystals, small needles, or granular powder; sp. gr. 1.464 (crystals); m.p. 33°C (liquefies); loses water of hydration at 100°C . Soluble in water and glycerin; insoluble in alcohol; solutions neutral to litmus. Nontoxic; nonflammable.

Derivation: Crystallization of sodium sulfate from water solutions. (Glauber's salt); also occurs in nature as mirabilite (q.v.).

Grades: Technical; N.F.

Uses: See under anhydrous form.

sodium sulfhydrate. See sodium hydrosulfide.

sodium sulfide (a) Na_2S ; (b) $\text{Na}_2\text{S} \cdot 9\text{H}_2\text{O}$.

Properties: Yellow or brick red lumps or flakes or deliquescent crystals; (a) sp. gr. 1.856 (14°C); m.p. 1180°C ; (b) sp. gr. 1.427 (16°C); decomposes at 920°C . Soluble in water; slightly soluble in alcohol; insoluble in ether; largely hydrolyzed to sodium acid sulfide and sodium hydroxide.

Derivation: By heating sodium acid sulfate with salt and coal to above 950°C , extraction with water, and crystallization.

Grades: Flake; fused; chip sulfide (60% Na_2S , 60% fused and broken; 30% crystals; liquid.

Containers: Barrels; drums; bulk.

Hazard: Flammable, dangerous fire risk. Strong irritant to skin and tissue. Liberates toxic hydrogen sulfide on contact with acids.

Uses: Organic chemicals; dyes (sulfur); intermediates; rayon (denitrating); leather (depilatory); paper pulp; solvent for gold in hydrometallurgy of gold ores; sulfiding oxidized lead and copper ores preparatory to flotation; sheep dips; photographic reagent; engraving and lithography; analytical reagent.

Shipping regulations: (Rail) Yellow label. (Air) Flammable Solid label.

sodium sulfite (a) Na_2SO_3 ; (b) $\text{Na}_2\text{SO}_3 \cdot 7\text{H}_2\text{O}$.

Properties: White crystals or powder; saline, sulfurous taste. Soluble in water; sparingly soluble in alcohol. Sp. gr.: (a) 2.633; (b) 1.5939. M.p.: (a) decomposes; (b) loses $7\text{H}_2\text{O}$ at 150°C .

Derivation: (a) Sulfur dioxide is reacted with soda ash and water, and a solution of the resulting sodium bisulfite is treated with additional soda ash; (b) by-product of the caustic fusion process for phenol.

Grades: Reagent; technical; F.C.C.

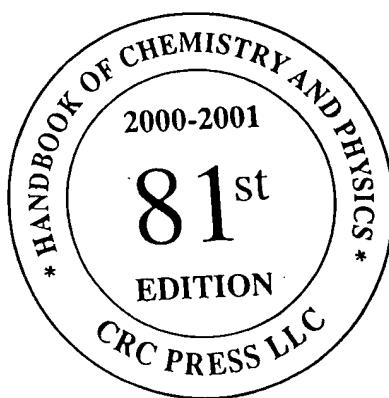
Containers: Bags; drums.

Hazard: Use prohibited in meats and other sources of Vitamin B₁.

Uses: Paper industry (semichemical pulp); water treatment; photographic developer; food preservative and antioxidant; textile bleaching (antichlor); dietary supplements.

CRC Handbook of Chemistry and Physics

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Editor-in-Chief

David R. Lide, Ph.D.

Former Director, Standard Reference Data
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PHYSICAL CONSTANTS OF ORGANIC COMPOUNDS

The basic physical constants for over 12,000 organic compounds are presented in this table, along with structures and references to other sources of information. An effort has been made to include the compounds most frequently encountered in the laboratory, the workplace, and the environment. The selection was based mainly on the appearance of the compounds in various specialized tables in this *Handbook* and in other widely used reference sources, such as the *Merck Index* and the *DIPPR Database of Pure Compound Properties*. The occurrence of a compound on regulatory lists of hazardous chemicals was also taken into consideration, as was the availability of reliable physical constant data. Clearly, criteria of this type are somewhat subjective, and compounds considered important by some users have undoubtedly been omitted. Suggestions for additional compounds or other improvements are welcomed.

The data in the table have been taken from many sources, including both compilations and the primary literature. Where conflicts were found, the value deemed most reliable was chosen. Some of the useful compilations of physical property data are listed at the end of this introduction.

The table is arranged alphabetically by the primary name, which is generally the Index Name from the 8th or 9th Collective Index of Chemical Abstracts Service (CAS). In a few cases, especially pesticides and pharmaceuticals, the common name is used rather than the more complex systematic name. By convention, CAS Index Names are written in inverted order, e.g., chloromethane is listed as methane, chloro and ethyl acetate as acetic acid, ethyl ester. Furthermore, certain important compounds are listed under Index Names which differ from the names by which they are commonly known (e.g. aniline appears as benzenamine and acetone as 2-propanone). In order to facilitate the location of compounds in the table, three indexes are provided:

- **Synonym Index:** Includes common synonyms, but not the primary name by which the table is arranged.
- **Molecular Formula Index:** Lists compounds by molecular formula in the Hill order (see Preface to this *Handbook*).
- **CAS Registry Number Index:** Lists compounds by Chemical Abstracts Service Registry Number.

Two lines of data appear for each compound. The explanation of the data fields follows.

Top Line:

- **No.:** An identification number used in the indexes and to identify the structure diagrams.
- **Name:** Primary name, generally the CAS Index Name.
- **Mol. Form.:** The molecular formula written in the Hill convention.
- **CAS RN:** The Chemical Abstracts Service Registry Number assigned by CAS as a unique identifier for the compound.
- **Merck No:** Monograph Number in *The Merck Index, Eleventh Edition*. It should be noted that this is not a unique identifier for a single compound, since several derivatives or isomers of a compound may be included in the same Monograph.
- **Beil. Ref:** Citation to the *Beilstein Handbook of Organic Chemistry*. An entry of 5-18-11-01234, for example, indicates that the compound may be found in the 5th Series, Volume 18, Subvolume 11, page 1234.
- **Solubility:** Solubility in common solvents on a relative scale: 1 = insoluble; 2 = slightly soluble; 3 = soluble; 4 = very soluble; 5 = miscible; 6 = decomposes. See List of Abbreviations for the solvent abbreviations.

Bottom line:

- **Synonym:** A synonym in common use. When the primary name is non-systematic, the systematic name appears here.
- **Mol. Wt.:** Molecular weight (relative molar mass) as calculated with the 1991 IUPAC Standard Atomic Weights.
- **mp/ $^{\circ}$ C:** Normal melting point in $^{\circ}$ C. Although some values are quoted to 0.1 $^{\circ}$ C, uncertainties are typically several degrees Celsius. A value is sometimes followed by "dec", indicating decomposition is observed at the stated temperature (so that it is probably not a true melting point). See the List of Abbreviations for other abbreviations.
- **bpt/ $^{\circ}$ C:** Boiling point in $^{\circ}$ C. When available, the normal boiling point is given first, without a superscript. This is the temperature at which the liquid phase is in equilibrium with the vapor at a pressure of 760 mmHg (101.325 kPa). Boiling point values at reduced pressure are also given in many cases; here the superscript indicates the pressure in mmHg. A "dec" or "exp" following the value indicates decomposition or explosion has been observed at the boiling point. A simple entry of "exp" (sometimes followed by a temperature) indicates explosion may occur on heating, even below the boiling point. An entry of "sub" indicates that no boiling point is available, but measurable vapor (sublimation) pressure has been observed upon heating the solid. A temperature may be given, but no precise meaning can be attached because the pressure is not specified.
- **den/g cm $^{-3}$:** density (mass per unit volume) in g/cm 3 . The superscript indicates the temperature in $^{\circ}$ C. Values are given only for the liquid and solid phases, and all values are true densities, not specific gravities. The number of decimal places gives a rough estimate of the accuracy of the value.
- **n_D:** Refractive index, at the temperature indicated by the superscript. Unless otherwise indicated, all values refer to a wavelength of 589 nm (sodium D line). Values are given only for liquids and solids.

Structures are given, when available, in the section following the main table, using the No. in the first column as the linking identifier.

PHYSICAL CONSTANTS OF ORGANIC COMPOUNDS (continued)

Nº.	Name Synonym	Mol. Form. Mol. Wt.	CAS RN mp°C	Merck No. bp°C	Bell. Ref. den/g cm ⁻³	Solubility <i>n</i> _D
8238	Octadecanediolic acid, diethyl ester	C ₂₂ H ₄₂ O ₄ 370.57	1472-90-8 54.5	240 ¹²	4-02-00-02178	eth 4; EtOH 4
8239	Octadecanediolic acid, 9,10-dihydroxy-, (R*,R*)-(t)- Phloionic acid	C ₁₈ H ₃₄ O ₆	23843-52-9	7297	4-03-00-01250	
		348.48	126			
8240	Octadecane, 1-(ethenylxyo)-	C ₂₀ H ₄₀ O 266.54	930-02-9 30	182 ³	4-01-00-02057 0.8138 ⁴⁰	chl 2
8241	Octadecane, 3-ethyl-5-(2-ethylbutyl)-	C ₂₆ H ₅₄ 366.71	55282-12-7	229.5 ¹⁰	4-01-00-00588 0.8115 ²⁰	1.45239 ²⁰
8242	Octadecane, 1-iodo-	C ₁₈ H ₃₇ I 380.40	629-93-6 34	383	4-01-00-00556 1.0994 ⁴⁰	H ₂ O 1; EtOH 2; eth 2 1.4810 ²⁰
8243	Octadecanenitrile	C ₁₈ H ₃₅ N 265.48	638-85-3 41	362	4-02-00-01242 0.8325 ²⁰	H ₂ O 1; EtOH 3; eth 4; ace 4 1.4389 ⁴⁵
8244	1-Octadecanethiol Stearyl mercaptan	C ₁₈ H ₃₈ S 288.57	2885-00-9 30	204-101 ¹¹	4-01-00-01894 0.8475 ²⁰	eth 4
8245	Octadecane, 9-p-tolyl- Toluene, p-(1-octyldecyl)-	C ₂₅ H ₄₄ 344.62	4445-08-3	185 ¹⁰	4-05-00-01221 0.8549 ²⁰	1.4645 ²⁰
8246	9,11,13-Octadecanetrienoic acid (Z,Z,Z) Eleostearic acid	C ₁₈ H ₃₀ O ₂ 278.44	3884-88-8 48.5			
8247	Octadecanoic acid Stearic acid	C ₁₈ H ₃₈ O ₂ 284.48	57-11-4 284.48	8761 350 dec; 232 ¹⁵	4-02-00-01206 0.9408 ²⁰	H ₂ O 1; EtOH 2; eth 4; ace 3 1.4299 ⁸⁰
8248	Octadecanoic acid, aluminum salt	C ₅₄ H ₁₀₅ AlO ₈ 877.41	637-12-7 118	370	4-02-00-01206	H ₂ O 1; EtOH 3; peth 3
8249	Octadecanoic acid, anhydride	C ₃₆ H ₇₀ O ₃ 550.95	638-08-4 72		4-02-00-01239 0.8365 ⁸²	H ₂ O 1; EtOH 1; eth 2; bz 2 1.4362 ⁸⁰
8250	Octadecanoic acid, 18-bromo- Stearic acid, 18-bromo	C ₁₈ H ₃₅ BrO ₂ 383.38	2536-38-1 75.5	240 ⁴	2-02-00-00361	bz 4; eth 4; EtOH 4
8251	Octadecanoic acid, butyl ester Butyl stearate	C ₂₂ H ₄₄ O ₂ 340.59	123-95-5 27	1589 343	4-02-00-01219 0.8542 ³⁵	H ₂ O 1; EtOH 3; ace 4 1.4328 ⁵⁰
8252	Octadecanoic acid, calcium salt	C ₃₆ H ₇₀ CaO ₄ 607.03	1592-23-0 179.5	1710	4-02-00-01206	H ₂ O 1; EtOH 1; eth 1
8253	Octadecanoic acid, cyclohexyl ester Stearic acid, cyclohexyl ester	C ₂₄ H ₄₆ O ₂ 366.63	104-07-4 44		4-08-00-00038 0.889 ¹⁵	eth 4
8254	Octadecanoic acid, 9,10-dihydroxy- 9,10-Dihydroxystearic acid	C ₁₉ H ₃₆ O ₄ 318.48	120-87-6 90	3171	4-03-00-01092	H ₂ O 1; EtOH 2; eth 2
8255	Octadecanoic acid, 2,3-dihydroxypropyl ester, (±)-	C ₂₁ H ₄₂ O ₄	22810-63-5 358.56	74	4-02-00-01225 0.9841 ²⁰	H ₂ O 1; EtOH 2; eth 2; lig 3 1.4400 ⁸⁸
8256	Octadecanoic acid, 1,2-ethanediyl ester	C ₃₈ H ₇₄ O ₄ 595.00	627-83-8 79	241 ²⁰	4-02-00-01223 0.8581 ⁷⁸	H ₂ O 1; EtOH 1; eth 4; ace 4
8257	Octadecanoic acid, ethyl ester	C ₂₀ H ₄₀ O ₂ 312.54	111-61-5 33	199 ¹⁰	4-02-00-01218 1.057 ²⁰	H ₂ O 1; EtOH 3; eth 3; ace 4 1.4349 ⁴⁰
8258	Octadecanoic acid, hexadecyl ester	C ₃₄ H ₆₈ O ₂ 508.91	1190-63-2 57		4-02-00-01220 1.4410 ⁷⁰	ace 4; eth 4; chl 4
8259	Octadecanoic acid, 2-[2-(2-(2-hydroxyethoxy)ethoxy]ethoxyethyl ester	C ₂₈ H ₅₂ O ₈	106-07-0			
		460.70	40	328	1.1285 ¹⁵	1.4593 ²⁰
8260	Octadecanoic acid, 2-hydroxyethyl ester	C ₂₀ H ₄₀ O ₃ 328.54	111-60-4 80.5	189-91 ³	4-02-00-01222 0.8780 ⁶⁰	EtOH 2; eth 3 1.4310 ⁶⁰
8261	Octadecanoic acid, lead (II) salt Lead stearate	C ₃₆ H ₇₀ O ₄ Pb 774.15	7428-48-0 125		4-02-00-01208 1.4	H ₂ O 1; Hot EtOH 3; eth 1
8262	Octadecanoic acid, 14-methyl- Stearic acid, 14-methyl	C ₁₉ H ₃₈ O ₂ 298.51	94434-64-7 37.5	182 ^{0.4}	4-02-00-01265 0.9400 ²⁰	
8263	Octadecanoic acid, 17-methyl-	C ₁₉ H ₃₈ O ₂ 298.51	2724-59-6 67.5	180 ^{0.3}	4-02-00-01260 0.8420 ⁷⁰	1.4336 ⁷⁰
8264	Octadecanoic acid, 9-methyl- Stearic acid, 9-methyl	C ₁₉ H ₃₈ O ₂ 298.51	86073-38-3 40	171 ^{0.1}	4-02-00-01271 0.9980 ²⁰	
8265	Octadecanoic acid, 3-methylbutyl ester Stearic acid, isopentyl ester	C ₂₃ H ₄₆ O ₂ 354.62	627-88-3 25.5	192 ²	2-02-00-00353 0.855 ²⁰	H ₂ O 1; EtOH 2; eth 3; ace 3 1.4335 ⁵⁰
8266	Octadecanoic acid, methyl ester	C ₁₉ H ₃₈ O ₂ 298.51	112-61-8 39.1	443; 215 ¹⁵	4-02-00-01218 0.8498 ⁴⁰	eth 4; chl 4 1.4367 ⁴⁰
8267	Octadecanoic acid, 1-methylethyl ester	C ₂₁ H ₄₂ O ₂ 326.56	112-10-7 28	207 ⁸	4-02-00-01219 0.8403 ³⁸	ace 4; eth 4; EtOH 4; chl 4
8268	Octadecanoic acid, 2-methylpropyl ester Isobutyl stearate	C ₂₂ H ₄₄ O ₂ 340.59	646-13-9 28.9	5034 223 ¹⁵	3-02-00-01017 0.8498 ²⁰	eth 4
8269	Octadecanoic acid, 12-oxo-, ethyl ester Stearic acid, 12-oxo, ethyl ester	C ₂₀ H ₃₈ O ₃ 328.52	88472-61-1 38		3-03-00-01294	EtOH 4
8270	Octadecanoic acid, pentyl ester Stearic acid, pentyl ester	C ₂₃ H ₄₆ O ₂ 354.62	6382-13-4 30		4-02-00-01220 1.4342 ⁵⁰	
8271	Octadecanoic acid, phenyl ester Stearic acid, phenyl ester	C ₂₄ H ₄₀ O ₂ 360.58	637-55-8 52	287 ¹⁵	4-06-00-00618	H ₂ O 1; EtOH 3; eth 3
8272	Octadecanoic acid, 1,2,3-propanetriyl ester Tristearin	C ₆₇ H ₁₁₀ O ₆ 891.50	555-43-1	9669	4-02-00-01233 0.8559 ⁹⁰	H ₂ O 1; EtOH 1; ace 3; bz 2 1.4395 ⁶⁰
8273	Octadecanoic acid, propyl ester	C ₂₁ H ₄₂ O ₂ 326.56	3634-92-2 28.9	188.8 ²	4-02-00-01219 0.8452 ³⁸	ace 4; eth 4; EtOH 4 1.4400 ³⁰
8274	Octadecanoic acid, 9,10,12,13-tetrabromo-, methyl ester Stearic acid, 9,10,12,13-tetrabromo, methyl ester	C ₁₉ H ₃₄ Br ₄ O ₂	614.09	63	3-02-00-01049	eth 4; EtOH 4; chl 4 1.4346 ⁴⁵

(ix) Evidence appendix - Item B

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.: 09/964,143) Art Unit 1617

Applicants: JAMES HUGH McLAUGHLIN) Examiner:

Filed: September 25, 2001) Shengjun Wang

For: EMOLlient SKIN CONDITIONING CREAM AND METHOD)

Assistant Commissioner of Patents
U.S. Patent and Trademark Office
Washington, D.C. 20231

Affidavit Two Under 37 CFR 1.132

STATE OF CONNECTICUT)
COUNTY OF WINDHAM) SS: *Woodstock*
)

JAMES HUGH McLAUGHLIN, being of full age and duly sworn according to law, deposes and says:

1. I am employed by Crabtree & Evelyn, Ltd., at 102 Peake Brook Road, P.O. 167, Woodstock, as a Formulation Chemist. I am the inventor of the invention described and claimed in the above-identified patent application.
2. I received a Bachelor of Science Degree in Chemistry from Fairleigh Dickinson University, Rutherford, New Jersey, in 1964.
3. My work experience follows:
 - a. 1952 – 1968 – Research & Development Division of Unilever Company; Edgewater, New Jersey, as follows: (1) Product Development Chemist in the Process Development Group; (2) Creative Product Developer in the New Product Development Group; (3) Senior Research Scientist; and (4) New Product Group Section Manager.

- b. 1969 – 1983 - Center For New Product Development, New York, New York, as a New Product Development Chemist and principal.
 - c. 1983 – 1998 – James H. McLaughlin New Products, Inc., Yarmouth Port, Massachusetts, as Chief Chemist and owner.
 - d. 1999 – to date – Crabtree & Evelyn, Ltd., Woodstock, Connecticut, as a Formulation Chemist.
4. I noted that U.S. Patent 6,042,815 (Kellner et al.), the primary reference against the invention set forth in the subject application, teaches at column 2, lines 25 – 63, “Examples of gelling agents which may be used... are sodium, potassium, aluminum, magnesium, or calcium salts of stearic... acids.... Preferably... sodium stearate.” Following those teachings, I performed the following experiments:
- a. I prepared a 1000 gram batch of the formulation set forth in Example 1 of Kellner et al. using procedure set forth in said example and the resultant product was a homogeneous, solid stick with a light brown color. A picture of said product is attached to this affidavit as Exhibit A. The continuous phase of the resultant oil-in-water emulsion solid composition represented 66.55% by weight of final stick and consisted of the stated weight percentage of following ingredients: 41.03% of water, 13% of butylene glycol, 3.49% a PEG 20 nonionic surfactant, 0.86% of PPC (a secondary gelling agent for the aqueous phase according column 4, line 14, of Kellner et al.), and a mixture of 0.62% of aluminum stearate and 7.55% of sodium stearate (the primary gelling agents). Further, weight percentage the water/butylene glycol mixture in said continuous aqueous phase calculates to be 81.2%. According to Kellner et al. the dispersed oil phase consisted of, by weight, a mixture of 12.44% of dimethicone and 3.51% of cyclomethicone gelled by

a mixture of 1.5% synthetic wax, 5.70% isostearyl alcohol and 1.5% hydrogenated castor oil and represents 24.65% by weight of resultant composition. The remainder of composition of Example 1 consisted of 8.8% by weight of particulates of which 4.8% by weight was titanium dioxide.

- b. I repeated the experiment outlined in (a) above with calcium stearate substituted for sodium stearate in accordance with said teachings set forth at column 2, lines 24 – 63, of Kellner et al. and the resultant product obtained was an apparently homogeneous, thick liquid with a brown color. A picture of said product is attached to this affidavit as Exhibit B.
- c. I prepared a 1000 gram batch of the formulation set forth in Example 2B of Kellner et al. using procedure set forth in Example 1 of Kellner et al. and the resultant product obtained was a homogeneous, solid stick with a white color. A picture of said stick is attached to this affidavit as Exhibit C. The continuous phase of the resultant oil-in-water emulsion solid composition represented 65.5% by weight of the final stick and consisted of the stated weight percentage of following ingredients: 41% of water, 12% of butylene glycol, 3.5% of a PEG 20 nonionic surfactant, 1.0% of PPC(a secondary gelling agent for the aqueous phase according column 4, line 14, of Kellner et al.) and 8% of sodium stearate (the primary gelling agent). Further, the weight percentage of the water/butylene glycol in said continuous aqueous phase calculates to be 80.9%. According to Kellner et al. the dispersed oil phase consisted of, by weight, 12% dimethicone gelled with 6% isostearyl alcohol and represented 18% by weight of resultant composition. Again, the balance of the composition consisted of 16.5% by

- weight of particulates, i.e., with 10% of Uvinol M40 USP sunscreen from BASF and 5% of titanium dioxide representing the bulk of the particulate matter.
- d. I repeated the experiment outlined in (c) above with calcium stearate substituted for sodium stearate in accordance the Kellner et al. disclosure set forth at column 2, lines 24 – 63 and more particularly lines 57 – 60, and the resultant product was a white coagulated solid mass in what appeared to be a clear aqueous liquid, not a solid stick as taught by Kellner et al. A photograph of said product is attached hereto as Exhibit D.
5. Based upon the foregoing experiments and the knowledge of the water solubilities of sodium stearate and calcium stearate that are known to “a person of ordinary skill in relevant art of making cosmetic compositions,” I concluded as follows:
- a. Reproduction of Examples 1 and 2B of Kellner et al. produced an oil-in-water emulsion solid stick make up (Example 1) and sunscreen (Example 2B) as described by Kellner et al. and as shown in Exhibits A and C attached hereto.
 - b. Reproduction of Examples 1 and 2B of Kellner et al. with calcium stearate substituted for sodium stearate as taught by Kellner et al. at column 2, lines 24 – 63, produced a liquid product as shown in Exhibits B and a clear liquid with a white colored, coagulated, solid mass therein as shown Exhibit D instead of product in form of a solid stick as taught by Kellner et al.
 - c. The foregoing experiments show that the teaching of Kellner et al. at column 2, lines 24 – 63, that sodium stearate and calcium stearate are equivalents as primary gelling agents in the compositions set forth in Kellner et al. is not true.
 - d. The results in the foregoing experiments are due to the fact that sodium stearate is soluble in the aqueous continuous phase of Kellner’s Examples 1 and 2B and produces a

solid gel; whereas, calcium stearate is insoluble in the aqueous continuous phase thereby apparently producing a liquid dispersion of calcium stearate particles in said aqueous continuous phase in the case of Example 1. In Example 2B, the calcium stearate particles are apparently part of the solid, white, coagulated mass in the clear, aqueous liquid.

- e. A person of ordinary skill in art of cosmetic compositions also knows the solubility of sodium stearate and calcium stearate in water and, thereby, knows that teaching of Kellner et al. that sodium stearate and calcium stearate are equivalents as gelling agents for an aqueous medium is false and is not to be believed. Further, the foregoing results teach a person of ordinary skill in cosmetic composition art not to use calcium stearate in the water and oil emulsion solid cosmetic compositions of Kellner et al.



JAMES HUGH McLAUGHLIN

Enc. Exhibits A, B, C and D

Sworn to and subscribed before me
this 19th day of July, 2004.

Elizabeth A. Rice
Elizabeth A. Rice, Notary Public
My Commission Expires: 9-30-07

Application/Control Number: 09/964,143

Art Unit: 1617

With respect to point 1, note Question under 35 U.S.C. 103 is not merely what reference expressly teach, but what they would have suggested to one of ordinary skill in the art at the time the invention was made; all disclosures of prior art, including unpreferred embodiments, must be considered. In re Lamberti and Konort (CCPA), 192 USPQ 278. Applicants may not ignore the full scope of Kellner's teaching. Kellner et al. provide six objects (see column 1, lines 36-54). First two objects encompass "solid" cosmetic composition which provide cooling feel to the skin, a smooth texture finish when applied to skin, and are capable of moisturizing the skin. Note "solid" therein is defined as solid or semi-solid. See column 2, lines 6-9. Therefore, one of ordinary skill in the art would have understood that Kellner's teaching is not limited to lip stick. Applicant may not take a particular example from Kellner as the full scope of Kellner's teaching.

With respect to applicants' point 2, with the 132 affidavit demonstrating that sodium stearate and calcium stearate are not equally useful as gelling agents in pure water. However, what applicant demonstrated is moot in view of the fact that the cosmetic composition disclosed by Kellner comprises other ingredients, such as oil, surfactant, which may well affect the gelling properties of the composition. Further, one of ordinary skill in the art would not have interpreted Kellner's teaching as sodium stearate and calcium stearate are exactly the same. Selection within the disclosed scope according to a particular composition would have been considered within the skill of the artisan.

8. With respect to applicants' third point, note, as stated above, Applicant may not take a particular example from Kellner as the full scope of Kellner's teaching, and Kellner's teaching would encompass the particular type of cosmetic composition herein claimed.

(x) Related proceedings appendix

None

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